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SEP 18 2006

PATENT

Atty. Dkt. No. APPM/006760.Y1/CPI/LB/PJS

REMARKS

This is intended as a full and complete response to the Office Action dated June 19, 2006, having a shortened statutory period for response set to expire on September 19, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-6 remain pending in the application and are shown above. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1 and 6 are amended to clarify the invention. These amendments are not presented to distinguish a reference, thus, the claims as amended are entitled to a full range of equivalents if not previously amended to distinguish a reference.

Claims 1, 5 and 6 rejected under 35 U.S.C. § 103(a) as being unpatentable over *Mori et al.* (US Pat. No. 6,673,262) in view of *Matsuse et al.* (U.S. Pat. No. 5,951,772). Applicants respectfully traverse the rejection. Claims 2-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the applied prior as applied to claim 1 above, and further in view of *Matsuse et al.* (U.S. Pat. No. 5,647, 945). Applicants' respectfully traverse this rejection.

The Examiner states that that *Mori* differs from the claim only in the specification recitation of the apparatus having a showerhead and the step of the showerhead being raised to a temperature greater than the temperature of the showerhead during film formation. The Examiner states that *Matsuse* '772 discloses a showerhead (10) and the step of the showerhead being raised to a temperature greater than the temperature of the showerhead during film formation (col. 17, lines 7-23). The Examiner concludes that it would have been obvious to one having ordinary skill in the art to modify the method of *Mori et al.*, to have the temperatures as taught by *Matsuse* '772 for the purpose of enhancing the cleaning of the chamber. The Examiner further states that *Matsuse* '945 is cited as disclosing the raising of the temperature by restricting the flow of cooling medium and further discloses the heater (124). The Examiner concludes that it would have been obvious to one having ordinary skill in the art to modify the method/process of *Mori et al.*, to include a cooler/heater for the shower head as taught by *Matsuse* '945.

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Mori et al. describes a cleaning gas at 10 to 700°C (column 4, line 54 and claim 7) and a gas distribution plate at 40°C during film deposition (column 7, line 37). This does not suggest that the shower head is at a higher temperature during cleaning than when forming a film on a substrate. *Mori et al.* teaches high frequency or microwave may be may be used for the excitation, depending on the type of apparatus. Col. 4, lines 4-5. *Matsuse et al.* teaches a high frequency power supply (col. 7, line 66 thru col. 8, line 22) and illustrates power supply 28 with a wire. A microwave can not be transmitted by a wire. *Matsuse et al.* does not suggest that the power supply 28 is interchangeable with any other activation method.

Mori et al. and *Matsuse et al.*, alone or in combination, do not teach, show, or suggest inserting a substrate into a chamber, introducing a film forming gas into the chamber via a shower head, forming a film on the substrate with the shower head at a first temperature, removing the substrate from the chamber, activating a cleaning gas including a compound containing fluorine atoms by exposure to microwaves, introducing the cleaning gas into the chamber, raising the temperature of the shower head to a second temperature greater than the first temperature; and then removing a deposit comprising tungsten and silicon, as recited in claim 1, and claims 2-5 dependent thereon.

Also, *Mori et al.* and *Matsuse et al.*, alone or in combination, do not teach, show, or suggest inserting a substrate into a chamber, introducing a film forming gas into the chamber via a shower head wherein the film forming gas comprises a compound containing tungsten atoms, forming a film on the substrate with the shower head at a first temperature, activating a cleaning gas including a compound containing fluorine atoms by exposure to microwaves, introducing the cleaning gas into a chamber, raising the temperature of the shower head to a second temperature greater than the first temperature, wherein the temperature of the shower head is raised to about 70°C or above, and then removing a deposit comprising tungsten and silicon, as recited in claim 6. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

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Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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